

In the Matter of

OSHA Emergency Temporary Standard

Docket Number OSHA-2020-0004

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submitted *pro se*

Part I-B

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Ground 3. Vaccination Efforts are Insufficient

OSHA has stated “That unvaccinated healthcare workers remain in grave danger is emphasized by the fact that thousands of new hospital admissions still occur each day (CDC, May 24, 2021b) in the midst of significant distribution of over three hundred million effective vaccine doses. “

The declines in January and February in terms of hospitalizations and deaths were largely driven by nursing home residents and staff being vaccinated.¹ Nursing home residents have been disproportionately affected in terms of deaths and hospitalizations, due to being vulnerable status and increased health needs. However, Dr. Yaneer Bar-Nam has a more compelling rationale, which is that the decrease could also be explained by reduced mobility during this time period and it was too early for the vaccinations to be effective.

In addition, it should be obvious that healthcare providers are some of the most trusted messengers on the COVID-19 vaccine². But while African American Research showed this in a poll, what should be clear is that given whom is likely unvaccinated due to lack of access in healthcare is a small number of workers, this rule is not likely going to reduce vaccine hesitancy on that basis, as that group of providers is likely already fully vaccinated.

Goals

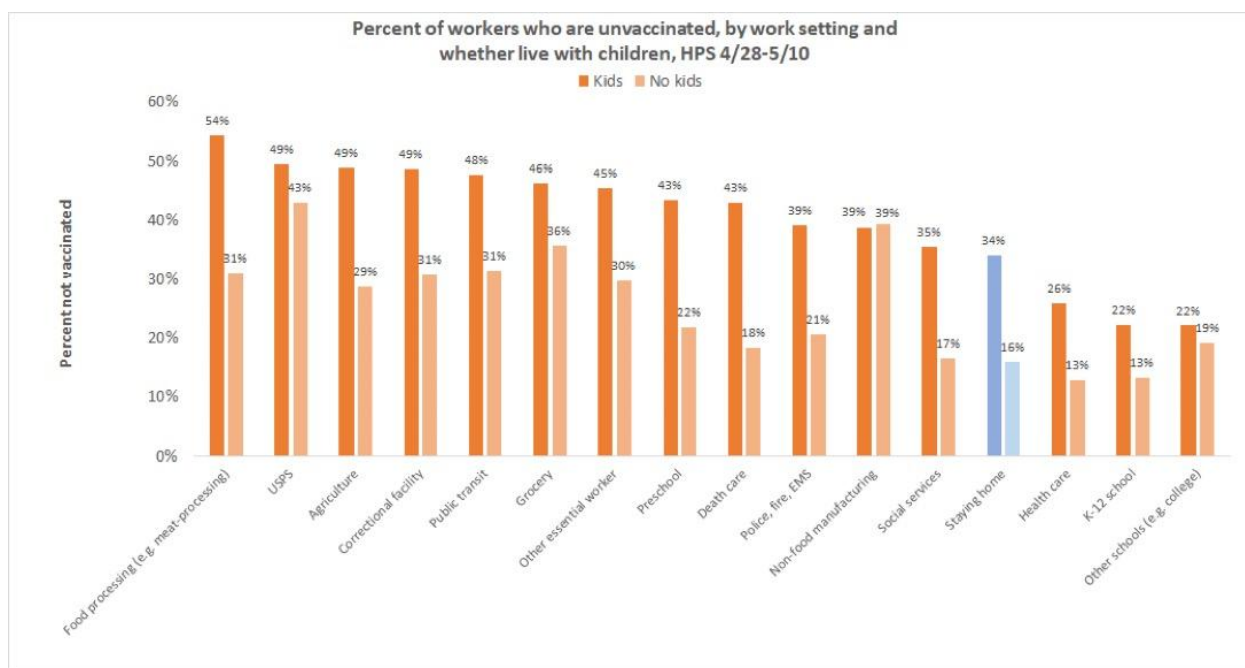
On page 188, OSHA describes its goals as ensuring access to vaccination, instead of using a stronger effort to encourage vaccinations.

¹ <https://twitter.com/WSJ/status/1369807829650059268?s=20>

² <https://covidvaccinepoll.com/app/aarc/covid-19-vaccine-messaging/#/>

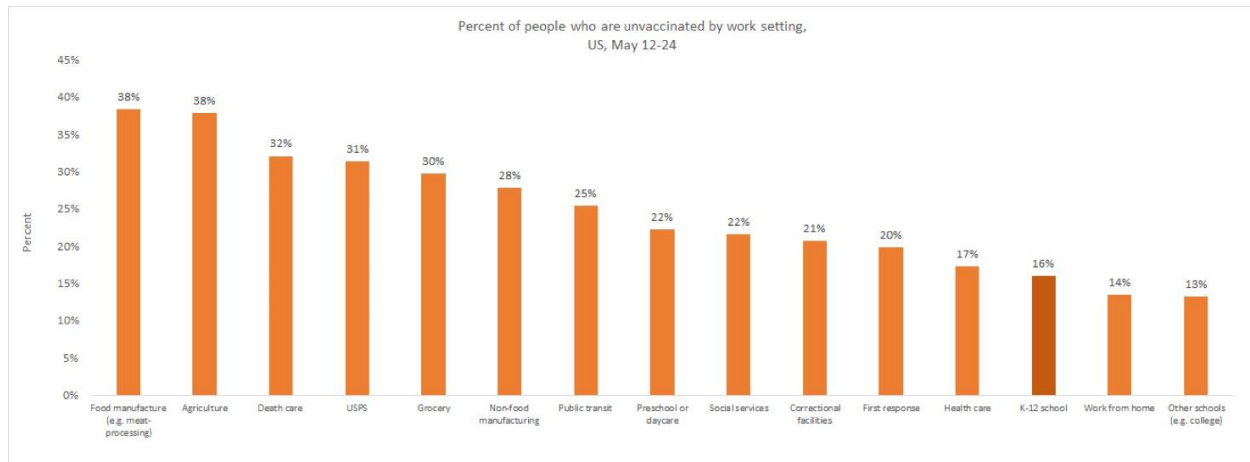
“However, despite the remarkable success of our nation’s vaccine program and the substantial promise that vaccines hold, as explained below, OSHA does not believe they eliminate the need for this standard. OSHA embraces the value of vaccination and views the ETS as essential to facilitating access to this critical control for those workers who wish to receive it while still protecting those who cannot be, or will not be, vaccinated. And by excluding certain workplaces and well-defined work areas where all employees are fully vaccinated from all requirements of the standard (paragraphs (a)(2)(iv) and (v)), and exempting fully vaccinated workers in certain settings where not all employees are vaccinated from several requirements of the standard (paragraph (a)(4)), the ETS encourages vaccination for employers and employees who do not want to follow those requirements.”

Yet OSHA assumes that with 75% of healthcare workers vaccinated, yet only 44% of working age individuals vaccinated, that a need for vaccine access at work applies to healthcare workers exclusively. In fact, vaccinations for healthcare workers are among the greatest among essential workers. This is irrational.



May 12-14 Household Pulse data shows similar trends, where healthcare is only behind work from home and education.³

³ <https://twitter.com/juliaraifman/status/1405611415533199364?s=21>



To the extent that variants come into play, B.117 is more transmissible but is not the variant that we need strong protection from right now. We need to stop the virus, and B.1617.2 is the key variant, because of the evidence of reduced immunity. And finally, instead of adjusting the guidance based on objective criteria, the guidance is uncertain.

One argument for this submitted by Yale medical doctors Brita Roy, a director of population health, and Howard Forman, a professor of public health, management, and economics, is that all essential workers making 300% of the poverty line or below should get a federally paid two days of sick leave for the vaccinations.⁴ Yet OSHA refused to consider why the rule only applies to healthcare workers, even though it cited this in its submission.⁵

Risks for Unvaccinated

The fact so many essential workers are not yet vaccinated. As Dr. Askish Kha, Dean of the Brown School of Public Health, wrote in the Washington Post “So what does all this mean? We are entering a time when being unvaccinated is going to become exceedingly more dangerous. Society is open. Distancing is a thing of the past, and mask-wearing is declining. All

⁴

<https://www.usatoday.com/in-depth/opinion/2021/04/07/essential-workers-paid-leave-covid-vaccine-side-effects-column/4816014001/>

⁵ <https://www.regulations.gov/document/OSHA-2020-0004-0874>

of the public health protections that kept unvaccinated people safe are disappearing, but the delta variant is gaining momentum.” Yet OSHA ignores the large number of unvaccinated workers.

Vaccine Mandates

While I believe that it is appropriate for OSHA to require that all employers to make the COVID-19 vaccine mandatory⁶ unless exempted due to federal anti discrimination law, I accept that OSHA has not chosen this path. I would alternatively request that employees who do not have proof of vaccination⁷ that they may need to offer on-site vaccination. We’re. Anthony Fauci has said that getting vaccinated is apart of “your responsibility to your community.” So while I strongly support vaccine mandates, if unwilling to take this bold step, OSHA can still take strong actions to promote vaccination.⁸

Employers can use tools such as convincing, confidence, and eliminating costs to get employees vaccinated.⁹ Given the goals of vaccinating, requiring an employer to try to convince employees to get vaccinated is nonsensical. A broad mandate would mean having some anti vaccination employers be required to argue for some government action, which raises questions of various dimensions. Avoiding these questions and using the other two strategies would also be consistent with the requirements in the current proposed rule for healthcare workers, which requires paid time off and cost free access for some healthcare workers, and can be corrected by applying the standard broadly to apply to all workers.

In some cases, requiring an employer to contract and pay for an outside entity to come on site may be unreasonable. An employer requesting the local public health department to arrange for vaccinations on site should be encouraged. In addition, any training should include

⁶ See https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf

⁷ I have no objection to how OSHA determines employers can tell which employee is vaccinated.

⁸ <https://twitter.com/pedsmd2b/status/1406271795255201795?s=21>

⁹ <https://downloads.regulations.gov/OSHA-2020-0004-0755/content.pdf>

the benefits as to why to get vaccinated and require a signed statement as to why vaccination is not required, similar to the bloodborne pathogens rule. Additionally, the OSHA guidance should¹⁰ make clear that an employer may request proof of vaccination from patrons, and may require vaccination for entry. In addition, consistent with the May 13 guidance people who are fully vaccinated do not need to mask or distance, an employer may exempt employees and patrons who are fully vaccinated from wearing a mask or distancing,

Ground 4. Insufficient Protection for Known Exposure to COVID-19

To be clear, in the context of a known case, certain requirements should be imposed to protect workers. As this is tied to a case of the virus, as opposed to community spread, this requirement should become permanent unlike other requirements. As stated as early as March 8, 2020 by the Centers for Disease Control and Prevention, “Recognizing persons who are at risk for COVID-19 is a critical component of identifying cases and preventing further transmission.”¹¹

While the emergency temporary standard is needed and should apply to all workers, using the tools we have can significantly narrow the scope of the requirements of the standard. Instead of imposing requirements “to protect these workers through requirements including patient screening and management, respirators and other personal protective equipment (PPE), limiting exposure to aerosol-generating procedures, physical distancing, physical barriers, cleaning, disinfection, ventilation, health screening and medical management, access to vaccination, and anti-retaliation provisions and medical removal protection”, applying these protections to all workers while removing hygiene theater would be more effective. In addition,

¹⁰ This is intended to preempt various state laws and policies that prohibit vaccine mandates.

¹¹ <https://downloads.regulations.gov/OSHA-2020-0004-0010/content.pdf>

due to the power of certain tools, namely vaccination, the outdoors, and fit tested respirators, and that other tools work means that workers can be protected while moving towards normalcy, and minimizing the burden of these needed measures.

Requirements for Known Exposure

When any worker¹² is in a place where a person who is suspected or confirmed to have COVID-19 and reasonably may be infectious¹³, the required precautions should be that the employer is fully vaccinated against COVID-19 and has respiratory protection. While I have a limited exception for outdoor testing involving brief contact, those two restrictions are consistent with other goals and the fact that a brief exposure outdoors is very low risk¹⁴. This dual requirement is warranted for dual protection of healthcare workers. By having a fit tested¹⁵ respirator and being fully vaccinated, the risk of getting COVID-19 is extremely low.

First, to the extent that OSHA says “[v]accination does not eliminate the need for layered controls for ... workers exposed to [people who may be infectious with SARS-CoV-2¹⁶]”. The fact is that the most effective and least intrusive tools should be used to eliminate the risk, and vaccinations are one of the most important tools, that someone should not inky not be treating in person someone who has COVID-19 but has not cleared isolation, but someone should be not be sharing the same indoor air with such person, even if observing all other precautions.

¹² The term worker is not limited to healthcare workers.

¹³ Once a patient clears quarantine or isolation for COVID-19, the need for airborne precautions ceases and these requirements should not apply.

¹⁴ This does not negate the need to exercise common sense. In the case of where a covid-19 test, or a prescription, or other material, is sent through a drive through, where no contact with the patient occurs, and the test is sent through a tray that goes through its own system (and not an open window), for example, a setup I have seen at some pharmacies, that should not be an exposure.

¹⁵ Or respirator that does not require fit testing, such as a loose fitting powered air purifying respirator hood

¹⁶ This substitution is deliberate as the virus being infectious is what is dangerous, not the lioness. Of course, having the illness COVID-19 does make someone at very high risk of being infectious with the virus, especially before they clear airborne isolation.

In Victoria, Australia, the key to getting the healthcare worker outbreak contained and eliminated was requiring N95 masks for staff members.¹⁷

While a multilayered approach works best, with the knowledge that N95 respirators are effective and the vaccines are safe and effective,¹⁸ requiring workers to be both fully vaccinated and wearing respiratory protection is appropriate and should virtually eliminate risks to workers who are assigned to care for patients who have COVID-19. This is the same guidance for measles¹⁹, which is as airborne as COVID-19 is. Dr. Jiminez notes “Interestingly, despite all the resistance to accept TB, measles, and chickenpox as airborne for decades and decades, they were accepted with much less evidence than we have today for COVID-19 being

¹⁷ [How Victoria's year from hell battling coronavirus has changed the state - ABC News](#)

¹⁸ I have submitted a Citizens Petition to the Federal Food and Drug Administration calling for this to be explicitly stated. Calling the vaccines safe and effective makes sense

¹⁹ <https://www.cdc.gov/infectioncontrol/pdf/guidelines/Measles-Interim-IC-Recs-H.pdf#page5>

airborne.”²⁰

https://www.cdc.gov/infectioncontrol/pdf/guidelines/Measles-Interim-IC-Recs-H....

B. Healthcare personnel

- HCP without acceptable presumptive evidence of measles immunity should not enter a known or suspected measles patient’s room if HCP with presumptive evidence of immunity are available.
- Respiratory Protection:
 - HCP should use respiratory protection (i.e., a respirator) that is at least as protective as a fit-tested, NIOSH-certified disposable N95 filtering facepiece respirator, regardless of presumptive evidence of immunity, upon entry to the room or care area of a patient with known or suspected measles.
 - Respirator use must be in the context of a complete respiratory protection program in accordance with Occupational Safety and Health Administration (OSHA) [Respiratory](#)

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Primum Infection Prevention and Control Recommendations for Measles in Healthcare Settings

[Protection Standard 29 CFR 1910.134](#) (<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134>).

- HCP should be medically cleared and fit-tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-certified disposable N95) and trained in the proper use of respirators, safe

The statement that “Healthcare workers face a particularly elevated risk of contracting COVID-19 in settings where patients with suspected or confirmed COVID-19 receive treatment, especially those healthcare workers providing direct care to patients” should be clarified. The only case that I am aware of infections occurring despite wearing a N95 is of Dr. Adeline Fagan who wore the same N95 mask for an exceptionally long period.²¹ As a consequence, I propose requiring employers to be wearing respiratory protection pursuant to either the full respiratory program or the alternative respiratory protection program proposed below.

²⁰ <https://twitter.com/iljcolorado/status/1391198502416494593?s=20>

²¹

<https://nypost.com/2020/10/07/doctor-who-died-from-covid-19-wore-same-mask-for-weeks-if-not-months/>

Given the need to protect from aerosols generating people instead of aerosol generating medical procedures, this concept should be removed from the OSHA guidance.

Close Contact

At the start of title III, OSHA begins on page 96 “Data on SARS-CoV-2 infections, illnesses, and deaths among healthcare employees support OSHA’s finding that COVID-19 poses a grave danger to these employees. Even fairly brief exposure (i.e. 6 feet for 15 minutes during a 24-hour period) can lead to infection, which in turn can cause death or serious impairment of health.”. Yet the definition of close contact for measles is the basis of shared air,²² or even exposure to the closed air within two hours of the person occupying that closed space,

HCW exposure

Exposure is typically defined as having shared airspace at the same time or, in a closed area, up to two hours after a person with measles has occupied the area. If a case of measles is identified at your facility, the following should be done:

- Evaluate HCWs’ measles immune status using criteria on page 1.
- Contact MDH to discuss post-exposure prophylaxis (PEP) and exclusion.

per the Minnesota Department of Health.

This definition is not based on airborne spread, as the six foot radius was for other diseases, as well. Of course, based on the fiction²³ that droplets spread COVID-19, the likelihood of a droplet contacting you is linear based on duration, and the duration does not matter so much. But in that case, droplets would be stopped by a fluid resistant surgical mask. In combination with the high mask usage observed, this cannot be supported by the full evidence.

In the Vermont corrections case the CDC used to base exposure on, the issue was that the exposures added up. Claims of shaking laundry were also used as if droplets would

²² <https://www.health.state.mn.us/diseases/measles/hcp/control.pdf>

²³ The evidence supporting the fact that aerosols, and not droplets, spread the virus is clear.

magically fall on the clothing of the inmate, then be picked up, shaken, aerosolized, and inhaled. But in addition to that, schools were moving students around every 14 minutes so that you did not meet an arbitrary consecutive requirement. For measles, even in the 1980's, the assumption was that it was not airborne.²⁴ Rather, early 20th century studies suggesting the need to be within 3 feet were cited.

The Boston case of infection occurred despite droplet precautions. Restaurants occurred despite different time periods.²⁵ A department store in China had infections beyond where droplets could go to.²⁶ An outbreak in Starbucks where 27 people were infected, but employees who wore quality masks did not get infected.²⁷

Since the reason for exposure is shared air, the contact tracing standard should be sharing air where the person who was infectious likely was or was speaking, singing, shouting, or yelling²⁸ or recently was²⁹. The reason for focusing on speaking is due to evidence that breathing is not what causes the spread of the virus, but speaking causes the spread of the virus.³⁰ This should be in addition to being in close proximity for a prolonged period, which could be six feet for three minutes based on the standard in New Mexico³¹.

²⁴ Measles Outbreak in a Pediatric Practice: Airborne Transmission in an Office Setting
Alan B. Bloch, Walter A. Orenstein, William M. Ewing, William H. Spain, George F. Mallison, Kenneth L. Herrmann, Alan R. Hinman
Pediatrics Apr 1985, 75 (4) 676-683;

<https://t.co/dSRCktgl6?amp=1>

²⁵ <https://t.co/hB505p1S9X?amp=1>

²⁶ Jiang G, Wang C, Song L, Wang X, Zhou Y, Fei C, Liu H. Aerosol transmission, an indispensable route of COVID-19 spread: case study of a department-store cluster. Front Environ Sci Eng. 2021;15(3):46. doi: 10.1007/s11783-021-1386-6. Epub 2020 Dec 25. PMID: 33391845; PMCID: PMC7771204. <https://t.co/ks2cbHgoa7?amp=1>

²⁷ <https://t.co/GITzPdVHKI?amp=1>

²⁸ This restriction is based on breathing not spreading COVID-19.

²⁹ This time period can be set to 2 hours or 3 air changes after the person left whichever is less.

³⁰ <https://arxiv.org/abs/2103.01188v2>

³¹ Noticeable is more like a few minutes, not 15.

PPE for Testing

In terms of testing, the guidance should be the same as for a suspected or confirmed case of COVID until the test is negative when a rapid test is performed before entering. However, due to the strong dilutive power of the outdoors, a brief encounter conducting a test could use reduced requirements. I would suggest that it be allowed by someone who is unvaccinated wearing the same full respiratory protection or if vaccinated, a medical mask with a faceshield would be adequate.

Notification of Workers

Title 29 U.S.C. §657(c)(3) provides that “The Secretary, in cooperation with the Secretary of Health and Human Services, shall issue regulations requiring employers to maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured under section 655 of this title. Such regulations shall provide employees or their representatives with an opportunity to observe such monitoring or measuring, and to have access to the records thereof. Such regulations shall also make appropriate provision for each employee or former employee to have access to such records as will indicate his own exposure to toxic materials or harmful physical agents. Each employer shall promptly notify any employee who has been or is being exposed to toxic materials or harmful physical agents in concentrations or at levels which exceed those prescribed by an applicable occupational safety and health standard promulgated under section 655 of this title, and shall inform any employee who is being thus exposed of the corrective action being taken.³².

³² [https://uscode.house.gov/view.xhtml?req=\(title:29%20section:657%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:29%20section:657%20edition:prelim))

As a consequence, it is necessary to notify an employee that they have been exposed³³, and to notify of the corrective action being taken. I also would note that the confidentiality of COVID exposures is a danger to public health insofar as complete contact tracing is a critical step to stop the airborne virus SARS-CoV-2 and all of its variants. The requirement to notify within 24 hours is acceptable.

In addition, it should be a requirement to notify the local public health department³⁴ so that isolation and quarantine orders, as well as contact tracing, can be conducted. An employer should be able to trust contact tracer who understands how COVID-19 spreads, and should not be the exclusive contact tracers.

And since employers are trained that while management cannot disclose who it is, and since the employees are trained on the “rules” for contact tracing are. Contact tracing is a science, and to some extent an art, although a scary piece in many places, a strong stigma can be developed. Training that people normally get COVID-19 inadvertently, could reduce this stigma, and should be included. Furthermore, this could encourage transparency, which can assist in contact tracing.

OSHA Citation

OSHA cited a Rhode Island doctor’s office³⁵. The failure to contact trace is a particularly egregious violation, yet in the citation from OSHA, they showed their ignorance of the science, issued slightly more than two weeks before OSHA announced an emergency temporary standard for healthcare only would be issued.

³³ Based on a six foot for 15 minute rule over 24 hours, it is relatively easy for someone to determine who they were exposed to.

³⁴ That is whomever is required to conduct contact tracing.

³⁵ https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/2021/06/OSHA20210943_NPUC%20Cite.pdf



Citation and Notification of Penalty

Company Name: North Providence Urgent Care, Inc., North Providence Primary Care Associates, Inc., Center of New England Urgent Care, Inc. and Center of New England Primary Care, Inc.
Inspection Site: 1830 Mineral Spring Avenue #1, North Providence, RI 02904

Citation 1 Item 1 Type of Violation: **Willful - Serious**

OSH ACT of 1970 Section (5)(a)(1): The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were not protected from the hazard of contracting the virus, SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), the cause of the COVID-19 disease, which can cause death:

a) North Providence Urgent Care, Inc. and North Providence Primary Care Associates, Inc. located at 1830 Mineral Spring Avenue, North Providence, RI and Center of New England Urgent Care, Inc. and Center of New England Primary Care, Inc. located at 775 Centre of New England Boulevard, West Greenwich, RI:

On or about November 25, 2020, a doctor displayed symptoms consistent with COVID-19 and continued to interact with employees in the North Providence and West Greenwich practices. This doctor tested positive for COVID-19 on December 4, 2020 and continued working throughout the four practices.

Employees working in the North Providence Urgent Care facility worked in close proximity to each other in areas including, but not limited to, the reception area. The employer did not implement engineering controls, such as portable high-efficiency particulate air (HEPA) fan/filtration systems or barriers between adjacent desks. Administrative controls such as, but not limited to, cleaning, disinfecting, and symptom screening of employees were also neglected.

The doctor did not initiate contact tracing or quarantine after close contact with a patient who was exposed to COVID-19. Subsequent exposure and after receiving a positive COVID-19 test result, the doctor did not quarantine from the workplace(s). The doctor's continued work throughout the practices facilitated the spread of COVID-19 within the four practices during the week of November 29, 2020 through December 5, 2020, where six employees tested positive for COVID-19.

Feasible and useful methods to correct the hazard include, but are not limited to:

- 1) Conduct a thorough hazard assessment of all four locations and the various job duties to identify potential workplace hazards that could increase risks for COVID-19 transmission. ¹
- 2) Implement engineering controls such as barriers, partitions, and distance. Move furniture or desks so that they are further apart, and install physical barriers or partitions between workstations. ²

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.



Citation and Notification of Penalty

Company Name: North Providence Urgent Care, Inc., North Providence Primary Care Associates, Inc., Center of New England Urgent Care, Inc. and Center of New England Primary Care, Inc.
Inspection Site: 1830 Mineral Spring Avenue #1, North Providence, RI 02904

3) Implement engineering controls such as mechanical ventilation to improve ventilation in spaces as needed and HEPA filtration to reduce levels of airborne virus. For spaces that have HVAC and mechanical ventilation systems, ensure that they operate properly and provide acceptable indoor air quality for the current occupancy level and the purpose of the space (for example patient exam room or office). Ensure that bathroom ventilation and fans are operational. Where mechanical ventilation is not available, use natural ventilation (i.e., opening windows if possible and safe to do so) and fans to improve ventilation. Check current OSHA and CDC guidance for additional ventilation options.

4) Ensure that screening is done for everyone (patients, Health Care Providers, employees and management employees) entering the offices, and is done consistently and with appropriate documentation.

5) Consider acquiring and administering COVID-19 vaccines to employees. Encourage all employees to get vaccinated and provide accommodations to allow employees to take time off to get vaccinated as well as recover from any potential side effects.

6) Enforce the use of well-fitting face coverings (masks) over the nose and mouth at all times in healthcare facilities, including in breakrooms or other spaces where employees might encounter co-workers.

7) When a Health Care Provider is sick with symptoms of COVID-19 or has been advised to self-quarantine, HCP should follow CDC Guidelines including but not limited to: returning home and notifying appropriate management, occupational health services, and health care providers.

8) Use contact tracing to ensure that employees who work in close contact to co-workers who have tested positive for COVID-19, and/or are awaiting test results, are informed, tested, and quarantined per CDC Guidance for Contact Tracing for COVID-19.³

9) Follow CDC guidelines for cleaning and disinfecting the work area when an employee is sick or has a COVID-19 diagnosis. Close off work areas used by the person who is sick and increase air circulation in the area. Wait 24 hours before allowing employees to enter the area to begin cleaning or disinfecting the workspace where feasible, such as in office areas, patient treatment rooms, and the reception area.

¹ Centers for Disease Control and Prevention (CDC), Resuming Business TOOLKIT Coronavirus Disease 2019 (COVID-19), Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19), May 2020, at: <https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/Resuming-Business-Toolkit.pdf>

² Centers for Disease Control and Prevention (CDC), Control Coronavirus Disease 2019 (COVID-19), Workplace Decision Tool, at: <https://web.archive.org/web/20200615143612/https://www.cdc.gov/>

See pages 1 through 4 of this Citation and Notification of Penalty for information on employer and employee rights and responsibilities.

Yet this citation makes several mistakes. The displaying with symptoms and not isolating or getting a COVID-19 test is the specific issue alleged, and the screening and contact tracing were the violations that occurred, and extremely serious. But OSHA even contradicted the emergency temporary standard. Mostly, though, it fails to reference what the hazard appeared to be based on the complaint.

To the extent that it describes engineering controls to make, it lists barriers, partitions, and distance before ventilation such as “HEPA filtration to reduce levels of airborne virus.” This is not a trivial distinction as in some terms of engineering controls, airborne and droplet distinctions are different. Droplet precautions favor eye protection and faceshields, as well as partitions and barriers, while they are ineffective against and can build up aerosols. And ventilation, while useful to aerosols, does not stop ballistic droplets that drop. In addition, the wait 24 hours and clean means that these magic droplets that infect within six feet for some period, stay in the air and don’t ventilate away, or that they fall on the ground and remain infectious for a long period. Given the little evidence supporting fomite transmission of COVID-19, this is nonsensical.³⁶

Ground 5. The Right to Quarantine or Isolate is Needed

When a person is exposed or tests positive, they need to know that they can isolate or quarantine. This risk occurs for low wage earners and others who are disproportionately harmed by the lack of a right and duty quarantine or isolate. As a consequence, the requirement to grant employees leave should not exempt employers of 10 or fewer employees.

³⁶ Also, this standard, if needed, would also be required for patients, meaning hospitals need to wait 24 hours before turning over a patient room and a COVID testing room needs to remain vacant following a positive test for 24 hours. I reject this standard, and the proposed uniform standard in the proposed rule should be consistent.

When the worker is exposed at the workplace, the corrective action that should be required should be the following corrective action taken. These requirements should differ slightly based on the risk of exposure. The employer should ordinarily be required to exclude the employee from the workplace for 14 days from when the exposure occurred without loss of pay or benefits³⁷. However, I am proposing four exemptions to the exemption, which the employer should have the right to utilize to avoid being required to provide Medical Removal Protection Benefits.

The first exemption is the “full protection” exemption, meaning the employee at the time of the close contact was fully vaccinated and was wearing respiratory protection. This exemption would apply to all cases of close contact. When this occurs, the employee has the same protection required to treat a patient infectious with COVID-19 safely, and no exposure to COVID-19 occurred.

The second is the “partial protection exemption” which means that the employer on day 5 after exposure needs to get a test, and can return after the test is negative. This is designed for lesser risk scenarios, namely (a) being fully vaccinated, (b) having recovered within three months of exposure, (c) wearing respiratory protection, or (d) being outdoors. Under this exemption, while the employee can remain in the workplace days 1-4, they would need to get tested on day 5 to remain at work.

The third exemption is the “mini respiratory exception” which means when exposed while using the mini respiratory protection program, a worker can stay at work if they get a daily rapid test which is valid for 12 hours from when administered and are negative and continue to wear respiratory protection pursuant to the mini respiratory protection program or the full / alternate programs as proposed for the first seven days after exposure. The key is that the two programs adequately reduce the risk.

³⁷ This is deliberately providing higher pay compared to the Medical Removal Protection Benefits requirement.

The fourth exemption is to test out early, which means using a PCR test on or after day 5 can return after seven days of exclusion. As an additional requirement, using a daily rapid test which is valid for 12 hours from when administered and being negative will provide additional assurances. The determination of testing in cost benefit should be minimized through tests that should have minimal costs compared to the costs of keeping an employee out of work for an entire day. For example, Philadelphia implemented a program to allow some residents free rapid tests for twice a week for four weeks with Abbott BinaxNOW.³⁸ S

In addition, if someone tests positive, I concur in keeping all workers out of work until it is safe to return. As stated on page 762, “OSHA determined that directing an employee who is COVID-19 positive to stay home until return to work criteria are achieved is critical to preventing the transmission of COVID-19 in the workplace.”

Ground 6. Rapid Testing should Replace Screening

In terms of screening, given the advances in technology, and the ability of tests such as the Binax Abbott antigen test, using a rapid test right before entry should replace screening for symptoms, or the temperature checks that have negligible value³⁹ and the National Institute of Health discontinued. I have never been asked about loss of taste or smell, even though that is incredibly common for this virus. If someone tests positive for a rapid test, the duty on the operator would be to forthwith notify the local public health authority so the person can be put into isolation.

But the question becomes when should a test be required⁴⁰? The answer is where people gather indoors and are looking for exemptions from the mandatory mask rule. Some

³⁸ <https://t.co/yBftWUAPv5?amp=1>

³⁹ Mitra, B., Luckhoff, C., Mitchell, R. D., O'Reilly, G. M., Smit, V., & Cameron, P. A. (2020). Temperature screening has negligible value for control of COVID-19. *Emergency medicine Australasia : EMA*, 32(5), 867–869. <https://doi.org/10.1111/1742-6723.13578>

⁴⁰ A broad Clinical Laboratories Improvement Act waiver may be needed, however, and should be granted.

other settings where this may be considered is at airports before taking part 121 flights due to travel concerns, in large settings like conferences or other indoor gatherings,⁴¹ healthcare and congregate care facilities, and where it is unrealistic to expect people to wear masks in compliance with this standard or enforce the mask mandate.⁴² Rather than make rapid tests, as in Germany⁴³, a tool for everyday freedom, a screening check is recommended. Dr. Michael Mina, a strong advocate for rapid testing as a public health measure notes that testing and vaccinations are tools that should be used to stay open.⁴⁴ In the context of B1617.2, and other variants, the need to test may need to be emphasized even if vaccinated.

And considering the benefits of low cost rapid tests which determine who is infectious, the fact this is not recommended is irrational. While I propose a twelve hour window, the intent is to encourage entities to have fully vaccinated workers go outside in a medical mask and a reusable face shield, and distribute tests to be self administered and then monitored for quick results, so that people can enter the workplace setting without other precautions. This sort of program would mean not having to implement a respiratory protection program or requiring certain entities to conduct fit testing, which should make it easier to do rapid testing. For example, Philadelphia implemented a program to allow some residents free rapid tests for twice a week for four weeks with Abbott BinaxNOW.⁴⁵

Ground 7. For PPE, Focus on Respiratory Protection

In terms of masks, the CDC has used the mask guidance, but a few areas should be looked at closely, and distinguished. But before going to discuss this, it should be noted that Dr.

⁴¹ Religious gatherings under the most favored nation rule adopted by the Supreme Court may need to be exempted.

⁴² While I accept that this is not being defined, I believe the mask exemption is the key reason, and as a consequence, I decline to provide a definition upon this unnecessary ground. OSHA may wish to impose such a standard, however.

⁴³ <https://t.co/JQrPSuuRjt>

⁴⁴ https://twitter.com/michaelmina_lab/status/1402716076610404353?s=21

⁴⁵ <https://t.co/yBftWUAPv5?amp=1>

Michael Klompas published recently stating that “Ironically, however, the need for better respiratory protection may be more acute for healthcare workers caring for patients without suspected or confirmed Covid-19 when community incidence rates are high.”

Respirators

The argument to use N95 masks has been something that has been unsuccessful. Arguments have been made that healthcare workers outside of covid units need N95 masks in high prevalence.⁴⁶ Due to the number of cases, and deaths, the Metropolitan Transportation Authority of the State of New York was forced to distribute N95 masks to its employees.⁴⁷ Many of the occupational deaths occurred during the first wave of the pandemic. For wildfires, the Center for Disease Control and Prevention says to wear a N95 mask. Yet the OSHA guidance includes in Docket number [OSHA-2020-0004-0766](https://www.regulations.gov/docket/OSHA-2020-0004-0766) guidance from the Center for Disease Control and Prevention calling a facemask an “acceptable alternative” to a respirator. Meanwhile, the National Institute of Health for non aerosol generating medical procedures taken from October of 2020 says to use a surgical mask or a N95, for the reason that for other diseases, such evidence of inferiority of surgical masks has not been found, and because surgical masks do reduce the spread of COVID-19 compared to no mask.⁴⁸

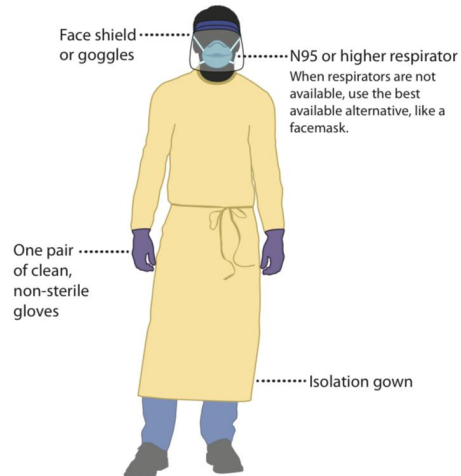
⁴⁶ Michael Klompas, MD, MPH, Chanu Rhee, MD, MPH, Meghan Baker, MD, ScD, Universal Use of N95s in Healthcare Settings when Community Covid-19 Rates are High, Clinical Infectious Diseases, 2021;, ciab539, <https://doi.org/10.1093/cid/ciab539>

⁴⁷ <https://t.co/F9EbMqJ14z>

⁴⁸ <https://downloads.regulations.gov/OSHA-2020-0004-0597/content.pdf>

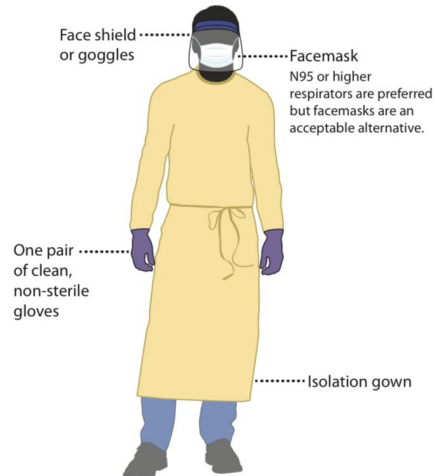
COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

Preferred PPE – Use N95 or Higher Respirator



CS 110818-C 01/23/2020

Acceptable Alternative PPE – Use Facemask



cdc.gov/COVID19



Wildfires leave behind a lot of ash that can irritate your eyes, nose, or skin and cause coughing and other health effects. Limit how much ash you breathe in by wearing an **N95** respirator. cdc.gov/disasters/wild... [#WildfireChat](https://twitter.com/WildfireChat)

Protect yourself against ash when you clean up.

- Wear a respirator to limit how much ash you breathe in.
- Wash off any ash that gets on your skin or in your eyes or mouth.

0:07

911 views

In defining what is a respirator, I could refer to a full respiratory program, but due to the fact that aerosols are critical, ensuring respiratory protection should be important. By imposing a mini respiratory protection program, I propose three tiers of protection: (a) full respiratory protection pursuant to 29 C.F.R. 1910.134, (b) the alternate respiratory protection pursuant to this proposal, and (c) the mini respiratory protection program.

The use of these options is to give additional options to employers and employees and reduce the burden of using respiratory protection. Cases where the full respiratory protection is used. The alternate respiratory protection program I suggest is designed to be an acceptable respiratory protection program for the pandemic which provides the same level of protection to workers from COVID-19 without all of the burdens of 29 C.F.R. 1910.134. The mini respiratory protection program is similar to the voluntary use of a respirator, which I consider to be similar to a facemask. Consequently, I will describe the alternative respiratory protection program.

The key is that the alternate respiratory program should still require the annual fit testing, with the exercises, such as the rainbow passage, to ensure the masks fit workers, but gets rid of some other requirements to lessen the burden.⁴⁹

First, it applies only to COVID-19 exposure. This is designed to ensure that it does not extend to other settings, such as firefighting. When hazards other than COVID-19 are present requiring respiratory protection, the full respiratory protection program would need to be used to ensure that workers are protected. The program cannot be used in an oxygen deficient atmosphere.

Second, in terms of which respirators are acceptable, the alternate program differs markedly from the full respirator several modifications. First, atmosphere supplying respirators⁵⁰ and escape only respirators are excluded. However, based on the science, a medical mask has

⁴⁹ The choice of whether the full or alternate respiratory program should be used should be for the employer to decide.

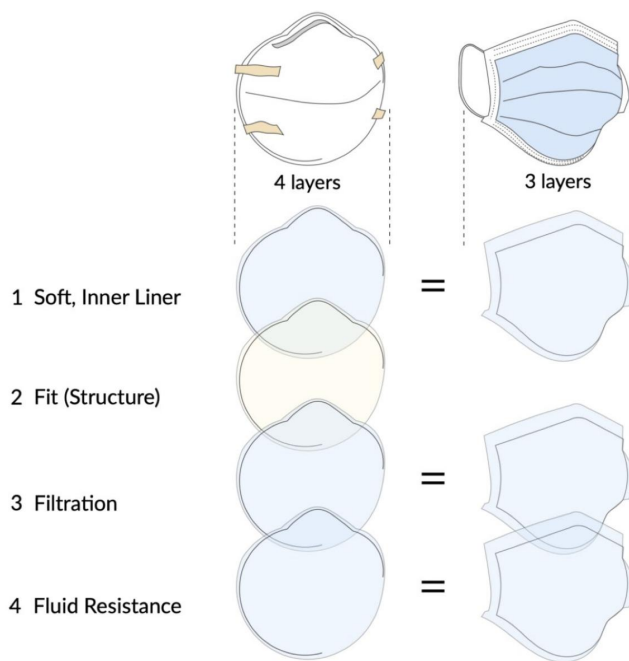
⁵⁰ This includes demand respirators, self contained breathing apparatuses, supplied air respirators, and airline respirators.

an acceptable filtration level for aerosols. As described by Fix The Mask⁵¹, both surgical masks and N95 respirators use the same soft inner layer, filtration, and fluid resistance, but the N95 has a fit structure unlike a surgical mask. Mask manufacture Lloyd Armbrust uses the same filter materials for both respirators and surgical masks.⁵²



Lloyd Armbrust
@larmbrust

People still think that Surgical Masks and **N95** Respirators are extremely different devices. I manufacture both @armbrust_usa and can tell you this isn't true. The only difference fit. The filtration media is exactly the **same**.



6:02 PM · 2/17/21 · Twitter Web App

This filtration, being identical means that a surgical mask with an appropriate brace can be an alternative to the N95. Due to the 98% filtration effectiveness at 0.1 microns and e microns for a medical mask, OSHA could limit this to a level 2 or 3⁵³ mask. While OSHA claims on page 224,

⁵¹ <https://fixthemask.medium.com/the-standards-for-face-masks-in-relation-to-covid-19-bf050f50714>

⁵² <https://twitter.com/larmbrust/status/1362175699675738115?s=21>

⁵³ The only difference between a level 2 and level 3 mask is fluid resistance, which is irrelevant in this case as blood and bodily secretions are not thought to spread COVID-19.

surgical masks only filter out very small airborne particles, that ignores the science. The particle filtration efficiency at 0.1 microns for a medical mask is at 95% for a level 1 mask and 98% for a level 2 or level 3 mask.⁵⁴ The brace does not need medical certification ability as it does not provide fit. Two limitations should be imposed, which is the same brand and type of mask used to fit test must be used and the same brace (or an identical brace) could be used as for the fit test.

Third, the procedure for medical evaluations should be omitted. Instead of requiring a medical evaluation, the requirements of the Americans with Disabilities Act should apply. Importantly, this reduces discrimination, and if someone can't wear a respirator, it is logical to conclude they have a disability requiring a reasonable accommodation. In addition, OSHA could apply the rules for the mini-respiratory program here if it concludes that it is not adequate.

Finally, in terms of extended use of N95 masks, the evidence shows that it is actually safer to continuously use N95 masks than to change N95 masks for each patient, even for infections that are assumed to spread by droplet transmission⁵⁵. In addition, any citation to guidance on reuse up to five times citing patient travel is not recent⁵⁶, and the risks of reuse compared to using a surgical mask cannot be compared.

Masks

In terms of a mask or a face covering, the guidance focuses on filtration as to why healthcare workers should wear a medical mask⁵⁷. Instead of focusing on the filtration, focusing on fit would be more important. In the words of federal employee and government indoor air

⁵⁴ https://cdn.vivarep.com/contrib/va/documents/al_lib_44.2015112134294585.pdf

⁵⁵ MacIntyre, C. R., Chughtai, A. A., Rahman, B., Peng, Y., Zhang, Y., Seale, H., Wang, X., & Wang, Q. (2017). The efficacy of medical masks and respirators against respiratory infection in healthcare workers. *Influenza and other respiratory viruses*, 11(6), 511–517. <https://doi.org/10.1111/irv.12474>

⁵⁶ For example, see <https://downloads.regulations.gov/OSHA-2020-0004-0870/content.pdf>

⁵⁷ I am using the term medical mask to refer to a facemask as defined in the emergency temporary standard, as opposed to a face covering. This is defined as a “surgical, medical procedure, dental, or isolation mask that is FDA-cleared, FDA-authorized, or offered or distributed as described in an FDA enforcement policy”.

quality researcher Dr. Dustin Poppendieck, “I would argue fit is more important than most fabric types. If air goes around the material it [doesn’t] matter what the material is.”⁵⁸ Rather than looking at the aerosol experts,⁵⁹ the OSHA position on fluid resistance is based on a position on

⁵⁸ <https://twitter.com/poppendieck/status/1331010368899080192?s=21>

⁵⁹ <https://tinyurl.com/FAQ-aerosols>

medical masks.

7.6. Is the fit of a mask important?

Yes, mask fit is very important to protect against aerosols. If there are gaps, a substantial fraction of the air will flow through there. See examples in the figure below (stills from [this great video](#)). Some of the masks do not fit well, on purpose to illustrate what to avoid. The best fitting mask is the cloth mask on the right, and it shows the least leakage. If your mask fits well, you should feel the material suck up against your nose and mouth when you are breathing in. Many people wear poorly fitting masks, which significantly reduces their filtering efficiency. Perhaps this is partially left over from the initial introduction of masks to protect against ballistic droplets, which only need a “parapet” in between the two people, and where fit is much less important.

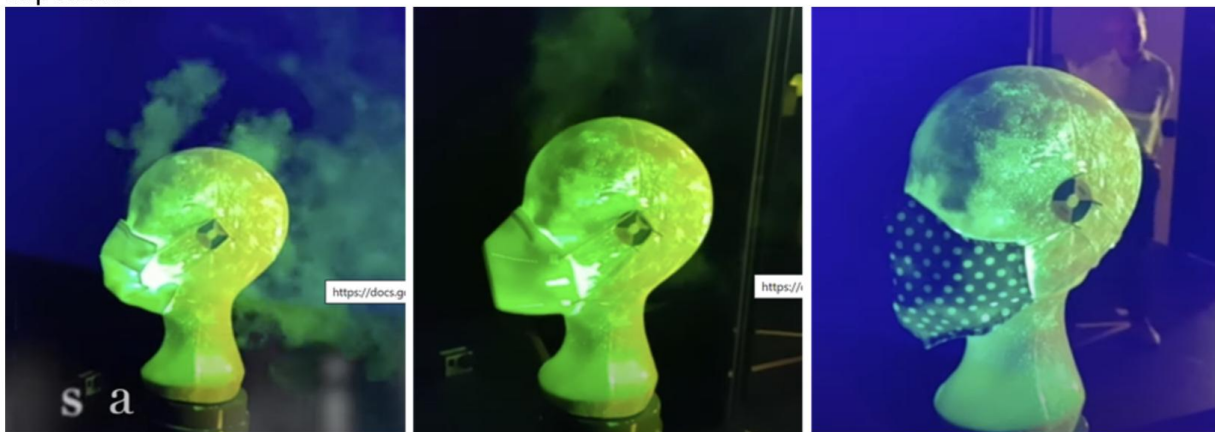


Figure: stills from [mask visualization video](#) showing leaks around gaps, which are major for the mask on the left, small for the mask in the middle, and not visible for the mask on the right.

Yet the reason that a well fitting face covering which complies with CDC guidance should be required is because well fitting masks, without gaps or leaks, are more effective. Any gap allows aerosols to go in and out instead of being filtered. Finally, without evidence that splashes

or bodily fluids spread the virus, the OSHA guidance requires medical grade masks. As a consequence, well fitting acceptable face coverings should be required subject to the exit criteria or exception specified elsewhere in this submission.⁶⁰

If OSHA chooses to require medical masks to be provided and worn, such masks should be distributed outside the building to anyone entering from that entrance, meaning an employee only entrance distribution system should not be permitted. That is because if a heightened standard of protection involving medical grade masks is needed for staff, it should not be restricted to staff. Getting everyone in a better mask would better protect workers.

Also, OSHA made clear that in declaring that it could accept NIOSH that a valve makes a respirator acceptable. Rather, it shows OSHA knows how to distinguish past guidance when new scientific knowledge has been given. The decision of OSHA to, based largely on the 2002-2003 SARS epidemic, given the key differences involving transmission, and not accepting recent scientific findings, is arbitrary. In imposing the right of employees to wear employee provided respirators unless provided by the employer, that right does not exist for employees outside of healthcare.

Furthermore, because of the strong benefits of everyone wearing a face covering, or universal masking, OSHA should require everyone to wear a face covering. This has been shown to work in that states implementing mask mandates have seen cases decline due to such fact.⁶¹

One area that the Center for Disease Control and Prevention does not address is what should happen when a healthcare worker is fitted for a specific model of respirator which is a N95 but not a surgical mask needs both airborne and droplet protection for reasons such as a COVID patient who can splash or spray blood or bodily fluids in its questions for healthcare

⁶⁰ If medical grade masks are required to be worn, they should be provided at all entrances to anyone entering.

⁶¹ Joo H, Miller GF, Sunshine G, et al. (2021). Decline in COVID-19 Hospitalization Growth Rates Associated with Statewide Mask Mandates — 10 States, March–October 2020. MMWR Morb Mortal Wkly Rep 2021;70:212–216. doi: <http://dx.doi.org/10.15585/mmwr.mm7006e2>

workers. It is telling that the guidance from the Center for Disease Control and Prevention refers only to extended use as a contingency method and refuses to consider this issue.⁶²

Eye Protection

While OSHA sites faceshields are needed, the evidence is clear that face shields with a medical mask is better than a mask alone, yet face shields cannot replace a mask. The reason is not due to eye protection, but the need to protect against inhalation or exhalation of aerosols. Without a mask, a face shield has little effect.⁶³ However, a face shield when worn with a mask does have a positive benefit as shown from a study in India.⁶⁴ They cite a 2014 study that discussed face shields as less effective against smaller coughs, and did not evaluate talking.

To the extent that OSHA cites the reasons of eye protection and the failure to have barriers, such reasons are precautionary and hygiene theater.⁶⁵ Nevertheless, employers had the ability to and many employers did mandate droplet precautions, including eye protection, during the pandemic. Furthermore, when a risk of splashes or sprays getting into the eyes, the bloodborne pathogen rule should require eye protection. A face shield provides good protection from splashes and sprays getting into the eyes, but the Center for Disease Control and Prevention gives no reason why splashes or sprays are driving the pandemic. As a consequence, the statement “The CDC ... explains that potential routes of close-range transmission include splashes and sprays of infectious material onto mucous membranes...” on pages 237-238 is without evidence.

In addition, under extraordinary circumstances such as heat stress or a flash fire, the exigency of the situation would take precedence over finding and putting on a face shield, and

⁶² Under the proposed alternate respiratory protection program, which using a surgical mask brace, this scenario would not occur. The brace would need to be disinfected, however, without losing effectiveness.

⁶³ <https://t.co/X8M0OZuCdW>

⁶⁴ Bhaskar ME, Arun S. SARS-CoV-2 Infection Among Community Health Workers in India Before and After Use of Face Shields. JAMA. 2020;324(13):1348–1349. doi:10.1001/jama.2020.15586
<https://jamanetwork.com/journals/jama/fullarticle/2769693>

⁶⁵ Plexiglass constitutes a different issue, as it can be harmful.

considering the medical distress the person likely would be in⁶⁶, such a requirement would not be warranted and should be removed.

Contact Transmission

Given the absence of evidence for contact transmission, that the mode of transmission affects drastically influenza, the OSHA guidance on cleaning and disinfecting surfaces should be eliminated. The hand hygiene requirement can remain, but to combat what I see as the frequent glove usage, a requirement not to use gloves or gowns for multiple individuals and to perform hand hygiene after doffing and before donning gloves when worn⁶⁷ to stop the virus.⁶⁸ and this does not address whether list N disinfectants are toxic for indoor air quality or the environment, which consittutes another hazard for workers⁶⁹.

And OSHA guidance should remember that gloves are not always required to comply with the bloodborne pathogens rule. For example, the nurses giving me the COVID-19 vaccines were not wearing gloves, but I asked them and others to wash their hands. The OSHA requirements for blood centers says “If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then...”⁷⁰. But why would OSHA then say when having COVID does not increase the risk of blood or bodily fluids which would be covered by the bloodborne pathogens rule, and given that even that rule has an exception⁷¹ So the simple requirement to use contact precautions, or enhanced cleaning, That, along with the fact that workers are reusing gowns for multiple patients, explains why I would eliminate contact precaution requirements mandates for COVID-19.

⁶⁶ The reason is because most people can tolerate a loose fitting mask.

⁶⁷ In my view, gloves are useless.

⁶⁸ I am not relying on gown or glove shortages for COVID-19, such as this April 1, 2021 article from Premier as a basis for my submission:

<https://downloads.regulations.gov/OSHA-2020-0004-0880/content.pdf>

⁶⁹ <https://t.co/6oQOFRRJdr>

⁷⁰ 29 C.F.R. 1910.1030(d)(3)(ix)(D)

⁷¹ That exception is narrow. For example, gloves must still be provided, and their usage must not be discouraged by employees, must be used by staff in training, and must be used when hands are broken.

Implementation

The OSHA guidance refers to guidance from several healthcare industries, from 2020⁷². The dental guidance referenced is not even the December 4, 2020 guidance, but the April 28, 2020 guidance⁷³. And guidance for firefighters from 2020, which references “respiratory droplets”, is referenced to by OSHA⁷⁴. One example is dialysis. Under the assumption that dialysis cannot be suspended for someone who has COVID, the patient getting dialysis can be a difficult endeavor. First, if the patient is in a hospital or long term care facility, then presumably precautions can be made. But not only do you have to use a separate room, but even more questions can arise. How do you transport the patient? Given the need for respiratory protection, assuming the patient cannot drive themselves, it will probably require using medical transport, as even paratransit cannot be expected to assure the driver is protected from the virus, conduct fit testing, be forced to take the vehicle out of service for a day, and other constraints. This is not to mention the vast amount of privacy regulations that exist.

Ground 8. Plexiglass is Harmful

OSHA next cites physical barriers, which are known in this context as plexiglass⁷⁵. On page 282, OSHA states “Barriers can be used to minimize occupational exposure to SARS-CoV-2. Barriers work by preventing droplets from traveling from the source (i.e., an infected person) to an employee, thus reducing droplet transmission.” While plexiglass protects

⁷² The OSHA regulations cites guidance from the Center for Disease Control and Prevention for dialysis, direct service provider, pharmacy, memory care, blood and plasma facilities, dental, persons under investigation in their homes, and laboratories, all of which is from 2020. The blood and plasma facilities has been archived.

⁷³ <https://downloads.regulations.gov/OSHA-2020-0004-0761/content.pdf>

⁷⁴ <https://downloads.regulations.gov/OSHA-2020-0004-0735/content.pdf>

⁷⁵ I use plexiglass to refer to physical barriers because of common usage

from droplets, droplets also travel ballistically; the fact that droplet transmission is negligible at best invalidates this argument. In fact, while no evidence exists for plexiglass⁷⁶

Many of the non-governmental sources cited on pages 286-289 support the fact of aerosol transmission of COVID-19, or the importance of speech. One study describes a barrier as an anteroom, and another where physical barriers were installed does not describe them as successful, unlike masking, distancing, or improving ventilation. And a sneeze guard for food is not the same as protecting against inhaling a virus.

As Judah Friedlander said, "Top aerosol scientists have been saying for a long time that plexiglass barriers can often make things worse."⁷⁷ In one study, of the interventions used, adding plexiglass was the worst of all of interventions in this study, followed by closing playgrounds.⁷⁸ The national Hockey League removed plexiglass from behind the players benches to reduce cases of coronavirus.⁷⁹ Jim Rosenthal points out that "More on plexiglass barriers. Positive airflow going toward the barrier will ALWAYS create negative flow behind the barrier drawing particles to that space. This applies to schools, stores, offices and the debate stage. This is not debatable - it's physics".⁸⁰ Ville Vuorinen replied that it large vortex can form

⁷⁶

<https://www.bloomberg.com/news/articles/2021-06-08/fortunes-spent-on-plastic-shields-with-no-proof-the-y-stop-covid>

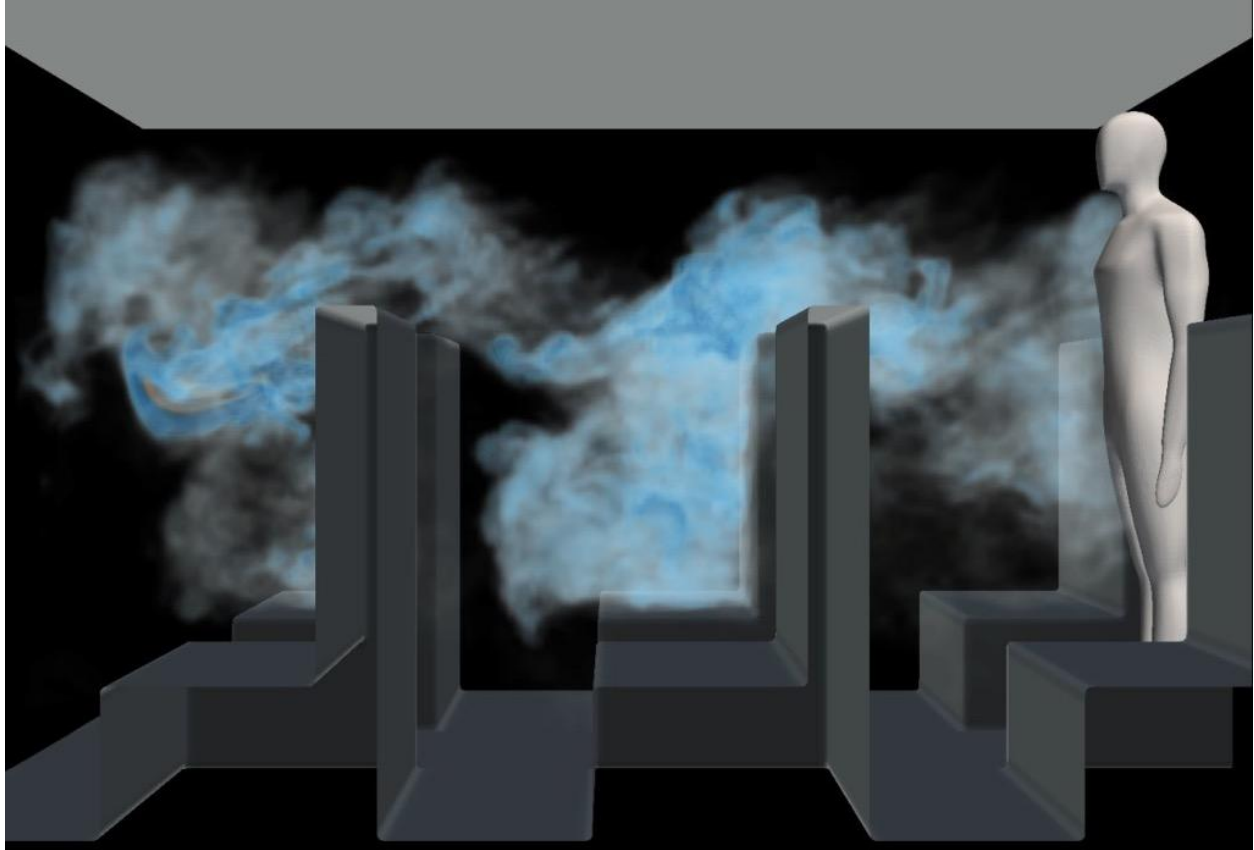
⁷⁷ <https://twitter.com/judahworldchamp/status/1390343184409051139?s=21>

⁷⁸ <https://t.co/BfYA9BMfFN>

⁷⁹ <https://t.co/RJkaJWu6F8>

⁸⁰ <https://twitter.com/jimrosenthal4/status/1313838589294370816?s=21>

trapping aerosols by the plexiglass⁸¹.



Professor of Chemistry at the University of Cork, in Ireland, John Werner calls plexiglass as something doing more harm than good⁸². What could be clearer is that some aerosol science has been explicitly saying not to use plexiglass. Examples include environmental engineer



Dr. Shelly Miller, PhD
@ShellyMBoulder

...

1/2 We do not recommend acrylic room dividers for reducing risk of airborne transmission. At best it does NOTHING, at worse it changes the airflow patterns in the room and can cause pooling of air, hotspots, and reduced ventilation effectiveness.

12:13 PM · 9/29/20 · [Twitter Web App](#)

professor Dr. Shelly Miller⁸³

and bioaerosol

⁸¹ <https://twitter.com/vvuorinenaalto/status/1313841391999627265?s=21>

⁸² <https://twitter.com/johnwenger9/status/1398564129418493954?s=21>

⁸³ <https://twitter.com/shellymboulder/status/1310975973853143041?s=21>



Dr. Alex Huffman
@HuffmanLabDU

Note: Do not use plexiglas to stop aerosols that flow over & around like smoke. Can be one component e.g. to reduce droplet spray at checkout counter. Not good here.

Sad that improper guidance led them to waste so much \$.

researcher Dr. Alex Huffman.⁸⁴

Distance, masks, ventilation, filtration, reduce time.

Even Jordan

Barab has said plexiglass at meatpacking plants does not offer much protection.⁸⁵

The statement on page 380 states “The ETS does not specify the type of material that must be used for physical barriers, but the material must be impermeable to infectious droplets that are transmitted when an infected individual is “sneezing, coughing, breathing, talking, or yelling.” Rather, the emergency temporary standard standard will cause the plexiglass to trap⁸⁶ the aerosols that are created when an infectious individual is “sneezing, coughing, breathing, talking, or yelling” endangering healthcare workers.⁸⁷

Indoor climate researcher Asit Miskra on the next three photographs details in the next three pages why plexiglass should rarely be used.

⁸⁴ <https://twitter.com/huffmanlabdu/status/1360449129302794241?s=21>

⁸⁵ <https://twitter.com/jbarab/status/1396856436626493440?s=21>

⁸⁶ Since the plexiglass is impermeable, the requirements effectively require the infectious aerosols to be trapped, increasing risk.

⁸⁷ This may be feasible, but it is unsafe.

Plexiglas barriers

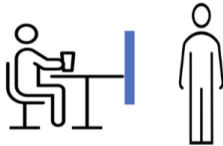
Why

One of the modes of spread for a respiratory infection is via large droplets exhaled by an infectious person. Such droplets can come out during speaking, sneezing/coughing, laughing, singing etc. These droplets are typically larger than 100 microns. At such a size, they are heavy enough that they will drop down before having travelled distances of about two meters.

Since the initial viewpoint on Covid-19 was that it is also spread primarily by such large droplets, social distancing was one of the first advised non-pharmaceutical interventions, even before masks. In certain situations, particularly indoors, in places like offices, maintaining a two-meter distance may not always be possible. In such situations, a barrier, set at least from face height, down, can help block these large droplets. Thus, health and safety guidelines have advised use of barriers in situations where a two-meter distance may not be possible¹.

The good

The physical barrier can be used for shielding in select areas where there are fixed scenarios of interaction of a specific nature, e.g., a reception desk, lunchroom serving station, cafeteria check out. In such situations Plexiglas can be mounted, keeping in mind to protect people on both sides and the likely posture of people on both sides.



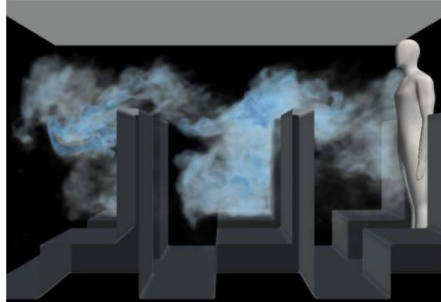
A situation like above does not help since the standing person's face (mouth and nose) are over the barrier. Hence, the barrier must be chosen to cover potentially the faces of people on both sides.

An important parameter is that we check the air mixing and interzonal air flows in the area to ensure the barriers do not significantly change these in the occupied area.

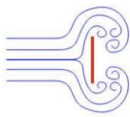
¹ <https://www.worksafebc.com/en/resources/health-safety/checklist/covid-19-safety-plan?lang=en>

The bad

A Plexiglas barrier is what we call a “bluff body” in fluid mechanics. The consequence is formation of stagnation zones immediately behind such objects. What this would lead to is an increased likelihood of exposure to aerosol particles in the air, which are likely virus laden.



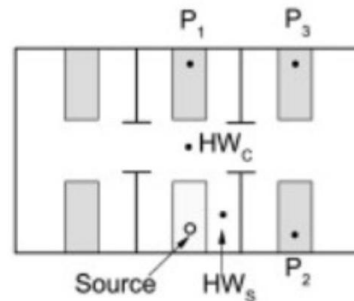
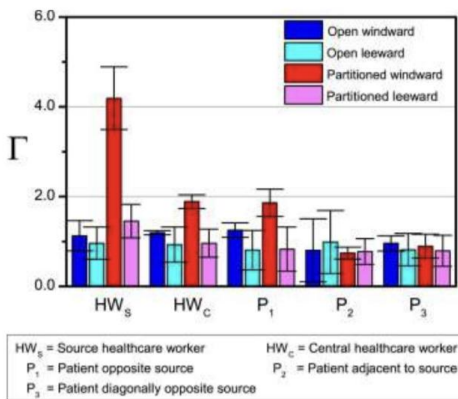
A demonstration, from flow simulation, of how air can get trapped because of vertical barriers².



A sketch of what happens with flow across a bluff body and stagnation zone formation.

This is also understood from previous studies related placement of internal partitions in open plan offices where barriers were more likely to reduce ventilation effectiveness (Lee and Awbi, 2004).

For a hospital, it was shown that such partitions increase non-uniformity in ventilation, reducing risks for some but increasing them for others (Gilkeson et al., 2013).



Comparison of the exposure index, Γ , at various locations, for combinations of ward type (open or partitioned) and source location (windward or leeward side of building). Risks for partitions is generally similar to open condition though for particular positions in the room, it can be a lot higher.

² <https://twitter.com/VVuorinenAalto/status/1313841391999627265>

In a UK hospital, the use of screens to increase bed numbers beyond those allowable in terms of distancing guidelines, led to a rise in nosocomial (hospital related) infections and hence the screens had to be discarded, going back to reducing number of beds which reduced nosocomial infections by 50%³.

A review of measures in schools also showed that adding desk shields did not reduce odds of Covid like illness and might even have increased them (Lessler et al., 2021).

Another instance of practical implementation was when the NHL removed glass barriers behind team benches to improve air flow (Kaplan, 2021).

In a longitudinal study done in a high school, following 8 positive cases associated with an office space, investigations revealed that Plexiglas dividers were impeding airflow, creating stagnation zones that likely increased risk (Doron et al., 2021).

So, at present, we have evidence from basic flow physics, simulation-based evidence, and reports from the field showing that deployment of barriers can either have no effect on reducing transmission risks and in worst case they may even increase said risks. Thus, deployment of Plexiglas barriers should be a carefully considered strategy and used only in specific situations while avoided in typical high density occupancy situations.

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³https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/979441/S11_69_Facemasks_for_health_care_workers.pdf

In fact, when OSHA did its 1994 cost benefit analysis on turbelocous, OSHA should note what that study required.⁸⁸ First of all, requiring settings like prisons, nursing homes, hospitals,

⁸⁸ <https://www.regulations.gov/document/OSHA-2020-0004-1000>

and labs to take precautions against tuberculosis, among other places is telling for what it required. The proposed rule would have required training and hazard reduction plans, known in that regulation as an exposure control plan, which has the same purpose as a COVID-19 plan. It required increased ventilation, such as using high efficiency purified air filters, or outside air, or other ventilation tools. And it required respiratory protection, but one thing was not required which this rule requires, which is physical barriers if unable to maintain six foot distance. For example, the 1994 analysis on a proposed standard for tuberculosis exposure said that “On average, less than 30 percent of household members become infected while living with an infectious source case, but the risk is highly variable. When the concentration of infectious particles is unusually high, exposures as brief as two hours have led to infection”. While COVID-19 is different from tuberculosis in several ways, the duration of infectiousness is substantially longer.

Ground 9. Outdoors

Going outside is substantially safer compared to indoor air. While on page 631 “OSHA does not distinguish between healthcare services provided outdoors from those same services provided indoors”. Yet despite thousands of superspreader events indoors, few, if any, superspreader events have occurred indoors.⁸⁹ Rather than citing a paper showing that outdoor risk was low and explaining why that risk is low⁹⁰ and arguing that requiring masks outside can discourage wearing masks indoors, OSHA cites a preprint that was *not* certified for peer review.⁹¹

⁸⁹ <https://t.co/OeRGNxDsuA>

⁹⁰ Javid, Babak; Bassler, Dirk; Bryant, Manuel B; Cevik, Muge; Tufekci, Zeynep; Baral, Stefan (2021). Should masks be worn outdoors? BMJ : British medical journal, 373:n1036.

DOI: <https://doi.org/10.1136/bmj.n1036>

⁹¹ <https://downloads.regulations.gov/OSHA-2020-0004-0859/content.pdf>

The American Industrial Hygienists Association, describing the risk outdoors, notes “[o]utdoor environments offer ‘infinite dilution’ of infectious aerosols”.⁹² Even in a setting such as rugby, transmission rates were low despite eight positive players participating. On tackling, “If the tackle was the mechanism of SARS-CoV-2 transmission for C1, other players would have also theoretically tested positive.”⁹³ As a consequence, the mask mandate and distancing rules should not apply outdoors.

Ground 10. Limitations on the Rule

This standard should mostly be temporary, so setting the grounds to terminate the order are critical. As a consequence, setting clear guidance is needed to ensure the risks are minimal before lifting mask mandates at workplaces where employers are endangered. As a consequence, several ways should exist to allow safe resumption of activities without the tools of the standard for masks and distancing.

Application

This rule should apply to workplaces containing workers covered by the Occupational Safety and Health Act with limited exceptions.

1. An exception for telework where all work is done via telework. This could include where work is done at a space other than an employer worksite or where the employer requests it. Some examples include a dedicated office or going to a public park or library

⁹² <https://downloads.regulations.gov/OSHA-2020-0004-0722/content.pdf>

⁹³ Jones B, Phillips G, Kemp S, et al SARS-CoV-2 transmission during rugby league matches: do players become infected after participating with SARS-CoV-2 positive players? British Journal of Sports Medicine Published Online First: 11 February 2021. doi: 10.1136/bjsports-2020-103714
<http://dx.doi.org/10.1136/bjsports-2020-103714>

to work. In such a case, an employer is not being directed to a specific location by an employer, and would entirely be exempt from this rule.

2. When telework is done, but it is not fully telework, an employer is not required to ensure the requirements for COVID prevention are maintained, such as masks, distancing, and ventilation⁹⁴. Also, any close contact is not recordable.

Low Risk Settings

Certain settings should be exempted because the likelihood of spread is very low from masks and distance, except in rare cases (namely a suspect or confirmed COVID case)

1. Any place where outdoors, due to ventilation being dilutive, masks and distance should categorically be excluded.
2. In settings where a person can be verified as fully vaccinated, due to the power of the vaccines, for such person⁹⁵.
3. When a person tested negative via a rapid test administered upon entry.

But instead of this proposal, I propose different requirements⁹⁶, namely using a high vaccination rate and low case rate based on the belief that it will be easy to contact trace and isolate cases so we do not see a resurgence of COVID-19. In addition, factors such as the high air change

⁹⁴ Since an employee on telework is not at a workplace, any close contact would not be reportable under this provision.

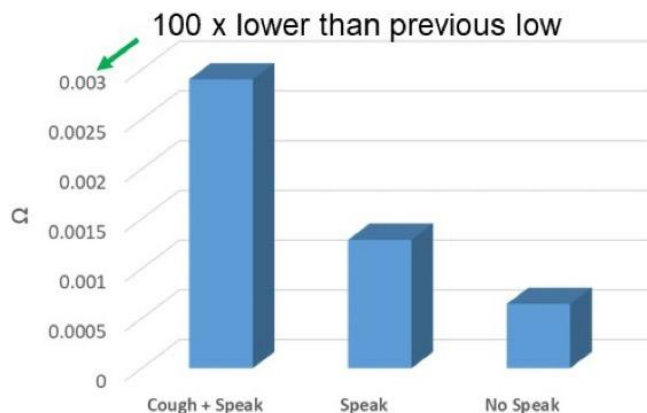
⁹⁵ The CDC definition of fully vaccinated appears to be for simplicity purposes only.

⁹⁶ This does not take into account vaccine evading variants, which the continued spread of COVID-19 can encourage.

rate and short occupation period makes elevators relatively safe⁹⁷.

Elevator

Index X + 1; 1 min travel w/o door opening; Air changes = 60 h⁻¹ (1 min⁻¹)



- Elevator airborne negligible
- Short trip / well-ventilated

Close Contact Dominates

- Masks
- No speaking etiquette
- Reduce density
- Distance & face away

Additional concern: fomites

Richard L. Corsi, Ph.D., PE.
Dean, Maseeh College of Engineering & Computer Science, Portland State University



Ground 11. Other Grounds

This section lists the remaining grounds that warrant brief discussion, either because they were described previously or because they don't require substantial changes.

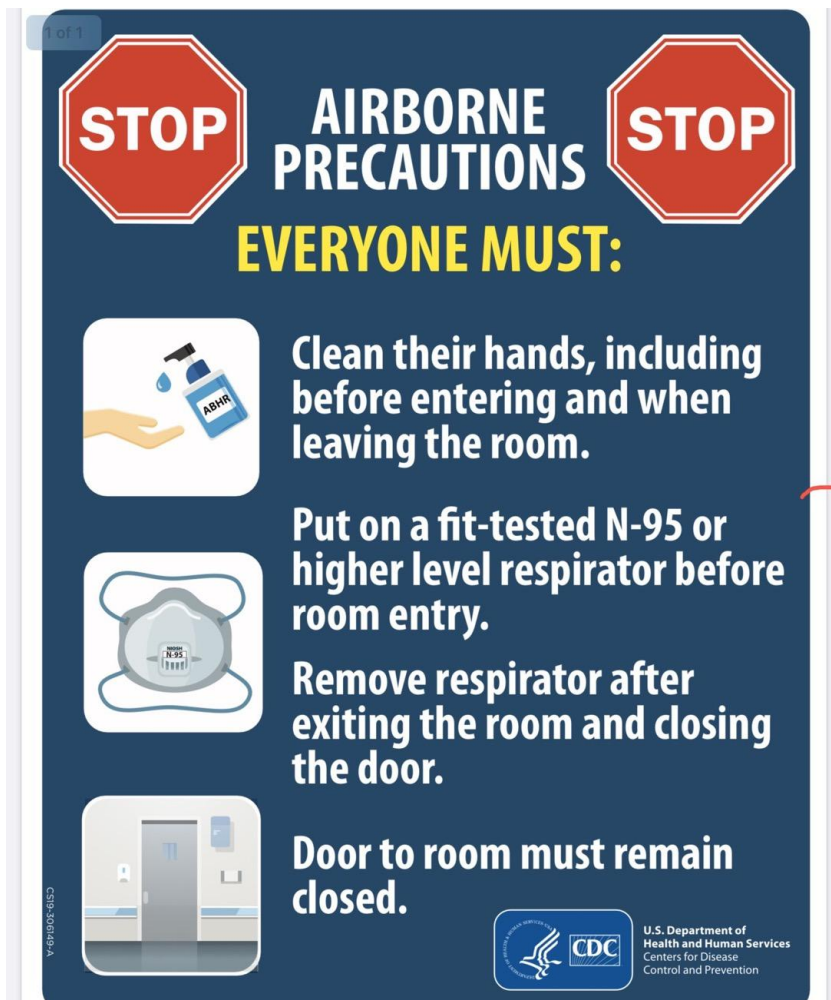
⁹⁷ <https://twitter.com/corsiaq/status/1293090965188616192?s=21>

Aerosol Generating Persons, not Procedures, Generate Risk

This title may seem misleading, because the OSHA guidance used aerosol generating procedures⁹⁸. As noted previously, this is completely misguided, and the consequence cannot be overstated. For the reasons previously described, the aerosol generating procedures guidance should be removed, and in my proposed changes, such removal has occurred. The requirement for respiratory protection and ventilation should be extended to all aerosol generating persons, which is any person who may be infectious with COVID-19.

⁹⁸ References also exist on aerosol generating medical procedures in influenza. Since the standard is not focused on influenza, it is sufficient to note that I believe this is extraneous and influenza transmits the same way as severe acute respiratory system coronavirus 2.0 spreads.

Due to this broad category, the requirements for an aerosol generating person, or someone who may be infectious with COVID-19, should be based on CDC's poster.⁹⁹



Why the proposed alternate respiratory protection program should be acceptable is because fit tested N95 or higher means at least a fit tested respirator. In lieu of an airborne infection isolation room, if not practical, maximizing ventilation and avoiding returning circulated air should occur. In addition, the critical requirements to keep the door closed and single person rooms.(unless all are confirmed positive) should be required.

⁹⁹ <https://www.cdc.gov/infectioncontrol/pdf/airborne-precautions-sign-P.pdf>

For dental work, instead of respirators, the use of dental extra oral suction systems that take the air away from the patient's mouth and filters or gets rid of the air should be used, based on engineering controls being prioritized over personal protective equipment.

Physical Distancing is Still Important

While I accept the physical distancing recommendations, the basis I would use is that aerosols are concentrated more heavily close to the source and dilute as distance increases. Dr. Jimenez noted that as the distance apart doubles, the number of aerosols decreases by a factor¹⁰⁰ of four on average in a room.¹⁰¹ Nothing else is of note, other than that while referencing the work of Wells, OSHA does not mention that Wells set the boundary between aerosols and droplets at 100 microns.

Ventilation is Key

The reason why ventilation and filtration is important is because of aerosols. Dr. Jimenez notes that ventilation helps with aerosols but not with droplets or surfaces.¹⁰² Yet this guidance is focused largely at hospitals that have excellent ventilation.¹⁰³ In addition, the statements made in the Center for Disease Control and Prevention guidance “Ventilation in Buildings” dated March 23, 2021 should be deemed adopted in full.¹⁰⁴

Training

While I agree on the importance of training, I would note that some requirements need to be adjusted. While I support requiring the importance of proper hand hygiene, proper hand

¹⁰⁰ $1/r^2$ where r is radius

¹⁰¹ <https://twitter.com/jljcolorado/status/1372757151769260039?s=21>

¹⁰² <https://twitter.com/jljcolorado/status/1383573143084670977?s=21>

¹⁰³ <https://twitter.com/abraarkaran/status/1403826019396571137?s=21>

¹⁰⁴ <https://downloads.regulations.gov/OSHA-2020-0004-0595/content.pdf>

hygiene is the key step to stopping negligible fomite transmission of COVID-19. The requirements to train on cleaning and disinfection for COVID-19 should be removed.

I understand that OSHA wants to train on how to clean and disinfect, they should specify that using fogging is not going to clean the air and allowing the air to change over is a better solution as described by Atmospheric Researcher Doug Collins.¹⁰⁵ In addition, the training should be on the need to wait for, Another example, which is on how SARS-CoV-2 transmits, the statement that you get COVID-19 by breathing in the virus from someone else who has it, who might not even show symptoms of the virus, while technically inaccurate,¹⁰⁶ is something that is understandable to a lot of people and could be sufficient. Likewise, using standard and transmission based precautions will be unclear to many outside of healthcare, and unnecessary training can distract from what matters.

That is why, in general, the training should be focused on what the employee's job is and not be required to include unnecessary information, For example, training on patient screening or other screening being performed could be workplace specific, and not be required to include patient screening unless the employee is a worker who does patient screening. Other factors that the CDC guidance says training may include are "policies and procedures related to physical distancing, physical barriers, Standard and Transmission-Based Precautions, ventilation, aerosol-generating procedures, and other COVID-19-related control measures in the workplace." Physical barriers and aerosol generating procedures are useless. And given that many employees do not need to know about merv or other air filtration requirements, but procedure at work, a broad teaching on ventilation is often unneeded. For example, if the business is outdoors, saying that your risk of getting the virus outside is very low could be enough.

¹⁰⁵ <https://twitter.com/earthmechanic/status/1346120804304629762?s=21>

¹⁰⁶ The first reason is you get SARS-CoV-2: not COVID-19. The second reason is that it is infectious with the virus SARS-CoV-2, not having COVID, which makes someone infectious.

Anti Retaliation / Recordkeeping

The anti-retaliation and recordkeeping requirements are good once extended to all workers, including small employers. However, the reporting to OSHA should be clarified in that overreporting should be encouraged¹⁰⁷, and cases should be recorded regardless of whether they were due to a workplace exposure. Due to the belief to, if in doubt, encourage reporting and recording, and the nature of the virus OSHA should make clear that it will not view such reports as a per se violation.

Model Plan

Having a plan is crucial, but it needs to be accurate. The University of Michigan has a plan, but it makes several mistakes. The OSHA guidance cites the University of Michigan Guidance.¹⁰⁸ That guidance (as of June 18) in addition to mixing up the mode of transmission, makes an error that says certain high and very high risks are misguided. For example, patient

¹⁰⁷ Employees who are fully vaccinated and wearing a respirator (and thus would qualify for the full protection exemption) should not be recorded as being exposed at work.

¹⁰⁸

<https://ehs.umich.edu/wp-content/uploads/2020/05/UM-COVID-19-Preparedness-and-Response-Plan.pdf>

transfer in an enclosed vehicle is deemed lower than an autopsy.

Exposure Risk:	Description:	U-M Specific:
Very High Exposure Risk:	These jobs are those with high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures.	<ul style="list-style-type: none">• Health care workers performing invasive specimen collection• Dentists performing some aerosol-generating procedures and exams• Autopsy/Medical Examiners• COVID-19 researchers working with live SARS-CoV-2
High Exposure Risk:	High exposure risk jobs are those with high potential for exposure to known or suspected sources of COVID-19.	<ul style="list-style-type: none">• Healthcare delivery and support staff exposed to known or suspected COVID-19 patients.• DPSS transport workers moving known or suspected COVID-19 patients in enclosed vehicles.• Police Officers• Staff members responsible for cleaning area where COVID positive individuals were occupying

On ventilation, the guidance is very unclear as to the benefits, stating “Increasing ventilation can help minimize exposures in workspaces. Although the SARS-CoV-2 virus is thought to primarily be spread through person-to-person contact, increasing ventilation within a system’s operating parameters can be part of a strategy for workplaces.” In fact, the misunderstanding means that a respirator outside of aerosol generating medical procedures is not needed if six feet apart under the guidance. It even gives engineering guidance like clear plastic sneeze guards as if that is a frequent mode of transmission of COVID-19. This sort of guidance is not a model to emulate, at least without significant changes.

Scientific Integrity

Federal Agencies are supposed to comport with the principles of scientific integrity¹⁰⁹. Yet this emergency temporary standard does not. As described by the joint statement “Our

¹⁰⁹ <https://www.regulations.gov/document/OSHA-2020-0004-0991>

Nation relies on the flow of objective, credible statistics to support the decisions of governments, businesses, households, and other organizations. Any loss of trust in the integrity of the Federal statistical system and its products can foster uncertainty about the validity of measures our Nation uses to monitor and assess performance and progress.”

Regardless of what has been said, OSHA has made two grave mistakes. OSHA assumed that only certain healthcare workers are at risk and that the mode of transmission is not airborne, and as a consequence refused to consider what precautions should be modified other than rejecting elastomeric masks and powered air purifying respirators don’t need additional protection such as a surgical mask. I would argue that comes from focusing on protecting the healthcare worker, not so much as viewing the emergency temporary standard as a method to protect all workers from a deadly airborne pandemic that has cost the lives of over six hundred thousand Americans in under eighteen months from a disease that we have safe and effective vaccines to prevent.

Calls for Emergency Temporary Standard

In addition, the agency has received countless calls, several calls have been made for an emergency temporary standard.

On March 6, 2020 the American Federation of Labor - Congress of Industrial Organizations sent a letter¹¹⁰ to the Department of Labor calling for an emergency temporary standard. They states that it was not just healthcare workers and first responders, or transportation workers such as airlines, but “other public facing workers” are threatened by the outbreak. Reasons given, which turned out to be mostly accurate¹¹¹ include universal suspect

¹¹⁰ <https://downloads.regulations.gov/OSHA-2020-0004-0899/content.pdf>

¹¹¹ Some evidence may exist of cross immunity from SARS-CoV-1.

ability, “evidence of sustained human-to-human transmission” with a reproductive number above 2, and “concern that the severity of illness is not correlated to the ability to transmit the virus.”¹¹²

These and other concerns, except for the multiple routes of infection, was what subsequently occurred. While some misunderstanding did occur, due to the emphasis on fecal transmission, they recommend risk based models, hierarchy of controls, and “NIOSH-certified N95 respirators or better and other PPE for health care and other workers at an elevated risk.”

On the failure to follow the precautionary principle, this meant Toronto had to close hospitals. But they note that a standard needs to be mandatory, yet the ability to distinguish essential workers can’t effectively be done by using healthcare or essential worker, which is why virtually all workers need to be covered. They also note that no safe exposure level exists and a control program. They state “evidence of airborne transmission of respirable infectious agent particles (droplet nuclei) from coughing, sneezing, and merely talking.” Of note, these droplet nuclei, per Doctor Prather, are aerosols.¹¹³ In terms of voluntary vaccination, I would recommend vaccine mandates, but accept this is uncommon. And the personal protective equipment should not go further than what I recommend for COVID-19 as unnecessary.

The Center for American Progress has, on June 11, 2020, stating in relevant part¹¹⁴ “OSHA should issue an emergency temporary standard mandating enforceable rules in the workplace to prevent the spread of COVID-19. ... Any emergency standard must be broad in scope and not narrowly tailored to one particular sector or set of occupations. Just as in OSHA’s bloodborne pathogen standard, an emergency standard must require each covered business to create an exposure control plan that requires them to comprehensively assess the risks to various categories of workers and then put a plan in place that effectively mitigates those risks.”

¹¹²

¹¹³ <https://twitter.com/kprather88/status/1310402873528778752?s=21>

¹¹⁴

<https://www.americanprogress.org/issues/economy/news/2020/06/11/486146/protecting-worker-safety-economic-security-covid-19-reopening/>

Later, they continue “OSHA should increase its levels of inspections and penalties for noncompliance and prioritize enforcement in any workplace in which workers are at higher risk, not just in health care facilities. OSHA should publicize these efforts, making clear that employers will be held accountable if they do not follow appropriate safety standards. In contrast to OSHA’s initial efforts to undo record-keeping requirements, firms should also be required to keep records of employee infections and report to local and state health authorities when workers have fallen ill due to COVID-19, while at the same time informing workers if they may have been exposed.” While I agree with these statements, the middle portion is where I have to note some disagreements.

Given the importance of the mode of transmission, I would note that to the extent, I do not rely on any knowledge of the AFL-CIO interactions with business. In addition, I disagree with the sentence “From a practical standpoint, any standard must in part include necessary social distancing, hand washing and sanitizing, deep cleaning, installing protective separation barriers such as shields, and the provision and use of adequate personal protective equipment.” My viewpoint on these requests is addressed elsewhere in this petition except that while I agree with distancing, the term I would use is “physical” for the reasons why Medstar uses this term.¹¹⁵

- **Physical distancing:** While inside our facilities, we'll help you practice physical distancing with floor markers, signage, and reconfigured waiting areas.
- You will never feel socially distant. MedStar Health associates care about you. Our mantra—It's how we treat people—is what drives us all to do what we do.

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¹¹⁵ The hand washing is yes and if hand sanitization means the same thing, I would agree with that. On deep cleaning, that should be rejected as hygiene theater. Protective barriers should be generally uninstalled, On protective equipment, except for masks, I do not believe additional protective equipment is needed.

¹¹⁶ <https://www.medstarhealth.org/mhs/about-medstar/a-safe-place-for-care/>

I called in a comment to the Centers for Disease Control and Prevention, published on July 6, 2020, an emergency temporary standard covering all workers.¹¹⁷ Yet this has never been listened to.¹¹⁸

¹¹⁷ https://downloads.regulations.gov/CDC-2020-0043-0003/attachment_1.pdf

¹¹⁸ I am not relying on that comment for purposes of this submission.